

**In the Claims:**

Please amend the claims as indicated below:

1. (Currently amended) A system for integrating Web Services with [[a]] business systems, comprising:

a processor; and

a memory comprising program instructions, wherein the program instructions are executable by the processor to implement a Web Services architecture design service configured to generate integrated Web Service architectures for integrating Web Services with business systems, wherein, to generate an integrated Web Service architecture for integrating a specific Web Service with a specific business system, the program instructions are executable by the processor to:

generate [[an]] the integrated Web Service architecture comprising a plurality of heterogeneous components of the specific business system in accordance with one or more integration design patterns[;], wherein, to generate [[an]] the integrated Web Service architecture, the program instructions are ~~further~~ executable by the processor to:

generate one or more Use Cases for the integrated Web Service;

generate a high-level architecture for the integrated Web Service, wherein the high-level architecture identifies two or more entities of the integrated Web Service and the relationships and interactions among the entities; and

generate a logical architecture for the integrated Web Service according to the Use Cases, wherein the logical architecture identifies two or more logical components of the integrated Web Service and the relationship among the logical components, and wherein the logical architecture comprises two or more layers; and

provide output indicating the generated integrated Web Service architecture for integrating the specific Web Service with the specific business system.

2. (Currently amended) The system as recited in claim 1, wherein, to generate [[an]] the integrated Web Service architecture, the program instructions are further executable by the processor to:

define a plurality of integration tiers, one or more basic components, and one or more Web Services technologies for integration; and

define how each of the plurality of integration tiers communicates with others of the plurality of integration tiers.

3. (Original) The system as recited in claim 2, wherein the plurality of integration tiers comprises one or more of: a client tier, a presentation tier, a business tier, an integration tier, and a resources tier.

4. (Currently amended) The system as recited in claim 1, wherein, to generate [[an]] the integrated Web Service architecture, the program instructions are further executable by the processor to define integration of one or more Enterprise Application Interface (EAI) products with the one or more Web Services technologies.

5. (Original) The system as recited in claim 1, wherein the business system is an

Enterprise business system.

6. (Original) The system as recited in claim 1, wherein the business system is a Cross-Enterprise business system.

7. (Original) The system as recited in claim 1, wherein the plurality of heterogeneous components of the business system includes one or more legacy mainframe systems.

8. (Original) The system as recited in claim 1, wherein the integrated Web Service architecture comprises:

a service provider configured to provide one or more services on an integrated Web Service business system implemented according to the integrated Web Service architecture; and

one or more service requesters configured to access the one or more services from the service provider via a network.

9. (Original) The system as recited in claim 8, wherein the integrated Web Service business system is a Business-to-Consumer system, wherein the service provider is a business service provider, and wherein the service requester is an end user.

10. (Original) The system as recited in claim 8, wherein the integrated Web Service business system is a Business-to-Business system, wherein the service provider is a business service provider, and wherein the service requester is a business server.

11. (Original) The system as recited in claim 1, wherein the design patterns include one or more Mainframe integration and interoperability design patterns.

12. (Original) The system as recited in claim 11, wherein the Mainframe

integration and interoperability design patterns include one of a Synchronous Mainframe Web Services design pattern and an Asynchronous Mainframe Web Services design pattern.

13. (Canceled)

14. (Currently amended) The system as recited in claim [[13]] 1, wherein the integration design patterns include one or more of:

an Application-to-Application design pattern;

a Standard Build design pattern;

a Hub-Spoke Replication design pattern;

a Federated Replication design pattern;

a Multi-Step Application integration design pattern; and

a Data Exchange design pattern.

15. (Original) The system as recited in claim 1, wherein the design patterns include one of a Closed Process integration design pattern and an Open Process integration design pattern.

16. (Original) The system as recited in claim 15, wherein the design patterns include one of a Service Consolidation–Broker integration design pattern and a Reverse Auction–Broker integration design pattern.

17. (Original) The system as recited in claim 1, wherein the layers comprise two or more of:

a network layer configured to serve as an underlying network for integrated Web

Services implemented according to the integrated Web Service architecture;

a transport layer for delivering messages between components of the integrated Web Services;

a service description language layer configured to describe service type and functionality of the integrated Web Services;

a transaction routing layer configured to route messages on the transport layer;

a service discovery layer configured to search for and locate the integrated Web Services;

a service negotiation layer configured to negotiate exchanges between service requesters and service providers implemented according to the integrated Web Service architecture;

a management layer configured for provisioning of the integrated Web Services and for monitoring and administration of the integrated Web Services;

a Quality of Service layer configured to provide reliability, scalability, and availability for the integrated Web Services;

a security layer configured to provide authentication, entitlement, and non-repudiation security on the transport layer; and

an Open Standards layer.

18. (Currently amended) A system for generating [[an]] integrated Web Service architectures, comprising:

a processor; and

a memory comprising program instructions, wherein the program instructions are executable by the processor to implement a Web Services architecture design service configured to generate integrated Web Service architectures for implementing integrated Web Service business systems, wherein, to generate an integrated Web Service architecture for implementing a specific integrated Web Service business system, the program instructions are executable by the processor to:

identify one or more logical components of the integrated Web Service architecture according to one or more use case requirements for the specific integrated Web Service business system;

translate the one or more use case requirements for the specific integrated Web Service business system and one or more technical constraints for the specific integrated Web Service business system to determine a plurality of Web Service components for the integrated Web Service architecture, wherein the Web Service components include software components;

categorize the Web Service components into two or more related groups according to a Web Services architecture integration framework;

define a plurality of integration tiers for the integrated Web Service architecture and one or more Web Services technologies for the integrated Web Service architecture according to [[a]] the Web Services architecture integration framework;

define how each of the plurality of integration tiers communicates with others of the plurality of integration tiers in the integrated Web Service architecture according to the Web Services architecture integration framework;

organize the groups of Web Service components according to the plurality of integration tiers and two or more layers of the integrated Web Service architecture; ~~and~~

apply one or more design patterns to the integrated Web Service architecture ~~where appropriate; and~~

provide output indicating the generated integrated Web Service architecture for implementing the specific integrated Web Service business system.

19. (Currently amended) The system as recited in claim 18, wherein the integrated Web Service architecture comprises:

a service provider configured to provide one or more services on ~~[[an]]~~ the integrated Web Service business system implemented according to the integrated Web Service architecture; and

one or more service requesters configured to access the one or more services from the service provider via a network.

20. (Original) The system as recited in claim 19, wherein the integrated Web Service business system is a Business-to-Consumer system, wherein the service provider is a business service provider, and wherein the service requester is an end user.

21. (Original) The system as recited in claim 19, wherein the integrated Web Service business system is a Business-to-Business system, wherein the service provider is a business service provider, and wherein the service requester is a business server.

22. (Original) The system as recited in claim 18, wherein the layers comprise two or more of:

- a network layer configured to serve as an underlying network for Web Services implemented according to the integrated Web Service architecture;

- a transport layer for delivering messages between components of the integrated Web Service architecture;

- a service description language layer configured to describe service type and functionality of the integrated Web Service architecture;

- a transaction routing layer configured to route messages on the transport layer;

- a service discovery layer configured to search for and locate services in the integrated Web Service architecture;

- a service negotiation layer configured to negotiate exchanges between service requesters and service providers implemented according to the integrated Web Service architecture;

- a management layer configured for provisioning of the integrated Web Service architecture and for monitoring and administration of the integrated Web Service architecture;

- a Quality of Service layer configured to provide reliability, scalability, and availability for the integrated Web Service architecture;



a security layer configured to provide authentication, entitlement, and non-repudiation security on the transport layer; and

an Open Standards layer.

23. (Currently amended) The system as recited in claim 18, wherein the ~~integrated Web Service architecture is configured for use in implementing~~ specific integrated Web Service business system is an Enterprise integrated Web Service.

24. (Currently amended) The system as recited in claim 18, wherein the ~~integrated Web Service architecture is configured for use in implementing~~ specific integrated Web Service business system is a Cross-Enterprise integrated Web Service.

25. (Original) The system as recited in claim 18, wherein the one or more components of the integrated Web Service architecture include one or more legacy mainframe systems.

26. (Original) The system as recited in claim 18, wherein the program instructions are further executable by the processor to define integration of one or more Enterprise Application Interface (EAI) products with the one or more Web Services technologies.

27. (Original) The system as recited in claim 18, wherein the plurality of integration tiers comprises one or more of: a client tier, a presentation tier, a business tier, an integration tier, and a resources tier.

28. (Original) The system as recited in claim 18, wherein the design patterns include one or more integration design patterns, wherein the integration design patterns comprise one or more of:

an Application-to-Application design pattern;

a Standard Build design pattern;

a Hub-Spoke Replication design pattern;

a Federated Replication design pattern;

a Multi-Step Application integration design pattern; and

a Data Exchange design pattern.

29. (Original) The system as recited in claim 18, wherein the design patterns include one of a Closed Process integration design pattern and an Open Process integration design pattern.

30. (Original) The system as recited in claim 18, wherein the design patterns include one of a Synchronous Mainframe Web Services design pattern and an Asynchronous Mainframe Web Services design pattern.

31. (Currently amended) An integrated Web Services business system, comprising:

one or more computers configured to implement:

a plurality of heterogeneous business components organized according to an integrated Web Service architecture for the integrated Web Services business system;

a plurality of tiers implemented according to the integrated Web Service architecture for the integrated Web Services business system.

wherein the plurality of integration tiers comprises a client tier, a presentation tier, a business tier, an integration tier, and a resources tier; and

a Web Service comprising one or more Web Services technologies defined by the integrated Web Service architecture for the integrated Web Services business system, wherein the Web Service is ~~[[and]]~~ configured to provide interoperability among the plurality of heterogeneous business components via a network according to the integrated Web Service architecture for the integrated Web Services business system;

wherein the integrated Web Service architecture for the integrated Web Services business system is ~~configured~~ was generated by a computer-implemented integrated Web Services architecture design service according to a vendor-independent architecture framework for integrating Web Services technologies with business systems comprising a plurality of heterogeneous components in accordance with a structured integration methodology and one or more design patterns.

32. (Original) The system as recited in claim 31, wherein the integrated Web Services business system further comprises one or more Enterprise Application Interface (EAI) products integrated with the one or more Web Services technologies.

33. (Canceled)

34. (Original) The system as recited in claim 31, wherein the integrated Web Services business system is an Enterprise business system.

35. (Original) The system as recited in claim 31, wherein the integrated Web

Services business system is a Cross-Enterprise business system.

36. (Original) The system as recited in claim 31, wherein the plurality of heterogeneous business components includes one or more legacy mainframe systems.

37. (Currently amended) The system as recited in claim 31, wherein the integrated Web Services business system further comprises:

a service provider configured to provide one or more services on the integrated Web Services business system; and

one or more service requesters configured to access the one or more services from the service provider via the network.

38. (Original) The system as recited in claim 37, wherein the integrated Web Service business system is a Business-to-Consumer system, wherein the service provider is a business service provider, and wherein the service requester is an end user.

39. (Original) The system as recited in claim 37, wherein the integrated Web Service business system is a Business-to-Business system, wherein the service provider is a business service provider, and wherein the service requester is a business server.

40. (Original) The system as recited in claim 31, wherein the design patterns include one of a Synchronous Mainframe Web Services design pattern and an Asynchronous Mainframe Web Services design pattern.

41. (Original) The system as recited in claim 31, wherein the design patterns include one or more of:

an Application-to-Application design pattern;

- a Standard Build design pattern;
- a Hub-Spoke Replication design pattern;
- a Federated Replication design pattern;
- a Multi-Step Application integration design pattern;
- a Data Exchange design pattern;
- a Closed Process integration design pattern;
- an Open Process integration design pattern;
- a Service Consolidation–Broker integration design pattern; and
- a Reverse Auction–Broker integration design pattern.

42. (Currently amended) A system for integrating Web Services with [[a]] business systems, comprising:

computer-implemented means for generating an integrated Web Services architecture for [[a]] integrating a Web Service with a business system;

computer-implemented means for applying a Web Services structured methodology and one or more design patterns to the generated integrated Web Service architecture to identify heterogeneous components for the integrated Web Service architecture and to organize the heterogeneous components according to the integrated Web Service architecture;

wherein said computer-implemented means for applying a Web Services structured methodology and one or more design patterns to the generated integrated Web Service architecture comprises means for providing integration and interoperability with the integrated Web Service architecture for existing business functionality of the business system;

computer-implemented means for providing output indicating the generated integrated Web Service architecture for integrating the Web Service with the business system; and

means for implementing [[an]] the integrated Web Service comprising the identified heterogeneous components organized according to the integrated Web Service architecture.

43. (Original) The system as recited in claim 42, wherein the business system is one of an Enterprise business system and a Cross-Enterprise business system.

44. (Original) The system as recited in claim 42, wherein the business system includes one or more legacy mainframe systems.

45. (Currently amended) A method for integrating Web Services with [[a]] business systems, comprising:

generating, by an integrated Web Services architecture design mechanism implemented on one or more computers and in accordance with one or more integration design patterns, an integrated Web Service architecture for integrating a specific Web Service with a specific business system, wherein the integrated Web Service architecture comprises comprising a plurality of heterogeneous components of the business system in accordance with one or more integration design patterns, wherein said generating an integrated Web Service architecture comprises:

generating one or more Use Cases for the integrated Web Service;

generating a high-level architecture for the integrated Web Service, wherein the high-level architecture identifies entities of the integrated Web Service and the relationships and interactions among the entities; and

generating a logical architecture for the integrated Web Service according to the Use Cases, wherein the logical architecture identifies two or more logical components of the integrated Web Service and the relationship among the logical components, and wherein the logical architecture comprises two or more layers; ~~and~~

providing output indicating the generated integrated Web Service architecture for integrating the specific Web Service with the specific business system;  
and

implementing the specific Web Service integrated with the specific business system according to the integrated Web Service architecture.

46. (Original) The method as recited in claim 45, wherein said generating an integrated Web Service architecture comprises:

defining a plurality of integration tiers, one or more basic components, and one or more Web Services technologies for integration; and

defining how each of the plurality of integration tiers communicates with others of the plurality of integration tiers.

47. (Original) The method as recited in claim 46, wherein the plurality of

integration tiers comprises one or more of: a client tier, a presentation tier, a business tier, an integration tier, and a resources tier.

48. (Original) The method as recited in claim 45, wherein said generating an integrated Web Service architecture further comprises defining integration of one or more Enterprise Application Interface (EAI) products with the one or more Web Services technologies.

49. (Original) The method as recited in claim 45, wherein the business system is an Enterprise business system.

50. (Original) The method as recited in claim 45, wherein the business system is a Cross-Enterprise business system.

51. (Original) The method as recited in claim 45, wherein the plurality of heterogeneous components of the business system includes one or more legacy mainframe systems.

52. (Original) The method as recited in claim 45, wherein the integrated Web Service architecture comprises:

a service provider configured to provide one or more services on an integrated Web Service business system implemented according to the integrated Web Service architecture; and

one or more service requesters configured to access the one or more services from the service provider via a network.

53. (Original) The method as recited in claim 52, wherein the integrated Web Service business system is a Business-to-Consumer system, wherein the service provider is a business service provider, and wherein the service requester is an end user.



54. (Original) The method as recited in claim 52, wherein the integrated Web Service business system is a Business-to-Business system, wherein the service provider is a business service provider, and wherein the service requester is a business server.

55. (Original) The method as recited in claim 45, wherein the design patterns include one of a Synchronous Mainframe Web Services design pattern and an Asynchronous Mainframe Web Services design pattern.

56. (Original) The method as recited in claim 45, wherein the design patterns include one or more of:

an Application-to-Application design pattern;

a Standard Build design pattern;

a Hub-Spoke Replication design pattern;

a Federated Replication design pattern;

a Multi-Step Application integration design pattern;

a Data Exchange design pattern;

a Closed Process integration design pattern;

an Open Process integration design pattern;

a Service Consolidation–Broker integration design pattern; and

a Reverse Auction–Broker integration design pattern.

57. (Original) The method as recited in claim 45, wherein the layers comprise two or more of:

- a network layer configured to serve as an underlying network for integrated Web Services implemented according to the integrated Web Service architecture;

- a transport layer for delivering messages between components of the integrated Web Services;

- a service description language layer configured to describe service type and functionality of the integrated Web Services;

- a transaction routing layer configured to route messages on the transport layer;

- a service discovery layer configured to search for and locate the integrated Web Services;

- a service negotiation layer configured to negotiate exchanges between service requesters and service providers implemented according to the integrated Web Service architecture;

- a management layer configured for provisioning of the integrated Web Services and for monitoring and administration of the integrated Web Services;

- a Quality of Service layer configured to provide reliability, scalability, and availability for the integrated Web Services;

- a security layer configured to provide authentication, entitlement, and non-repudiation security on the transport layer; and

an Open Standards layer.

58. (Currently amended) A method for generating [[an]] integrated Web Service architectures, comprising:

identifying, by an integrated Web Services architecture design mechanism implemented on one or more computers, one or more logical components of [[the]] an integrated Web Service architecture for implementing a specific integrated Web Service business system according to one or more use case requirements for the specific integrated Web Service business system;

translating, by the integrated Web Services architecture design mechanism, the one or more use case requirements for the specific integrated Web Service business system and one or more technical constraints for the specific integrated Web Service business system to determine a plurality of Web Service components for the integrated Web Service architecture, wherein the Web Service components include software components;

categorizing, by the integrated Web Services architecture design mechanism, the Web Service components into two or more related groups according to a Web Services architecture integration framework;

defining, by the integrated Web Services architecture design mechanism, a plurality of integration tiers for the integrated Web Service architecture and one or more Web Services technologies for the integrated Web Service architecture according to a Web Services architecture integration framework;

defining, by the integrated Web Services architecture design mechanism, how each of the plurality of integration tiers communicates with others of the plurality of integration tiers in the integrated Web Service architecture according to the Web Services architecture integration framework;

organizing, by the integrated Web Services architecture design mechanism, the groups of Web Service components according to the plurality of integration tiers and two or more layers of the integrated Web Service architecture; and

applying, by the integrated Web Services architecture design mechanism, one or more design patterns to the integrated Web Service architecture where appropriate; and

providing, by the integrated Web Services architecture design mechanism, output indicating the generated integrated Web Service architecture for implementing the specific integrated Web Service business system.

59. (Currently amended) The method as recited in claim 58, wherein the integrated Web Service architecture comprises:

a service provider configured to provide one or more services on ~~[[an]]~~ the integrated Web Service business system implemented according to the integrated Web Service architecture; and

one or more service requesters configured to access the one or more services from the service provider via a network.

60. (Original) The method as recited in claim 59, wherein the integrated Web Service business system is a Business-to-Consumer system, wherein the service provider is a business service provider, and wherein the service requester is an end user.

61. (Original) The method as recited in claim 59, wherein the integrated Web Service business system is a Business-to-Business system, wherein the service provider is a business service provider, and wherein the service requester is a business server.

62. (Original) The method as recited in claim 58, wherein the layers comprise two or more of:

- a network layer configured to serve as an underlying network for Web Services implemented according to the integrated Web Service architecture;

- a transport layer for delivering messages between components of the integrated Web Service architecture;

- a service description language layer configured to describe service type and functionality of the integrated Web Service architecture;

- a transaction routing layer configured to route messages on the transport layer;

- a service discovery layer configured to search for and locate services in the integrated Web Service architecture;

- a service negotiation layer configured to negotiate exchanges between service requesters and service providers implemented according to the integrated Web Service architecture;

- a management layer configured for provisioning of the integrated Web Service architecture and for monitoring and administration of the integrated Web Service architecture;

- a Quality of Service layer configured to provide reliability, scalability, and availability for the integrated Web Service architecture;

a security layer configured to provide authentication, entitlement, and non-repudiation security on the transport layer; and

an Open Standards layer.

63. (Currently amended) The method as recited in claim 58, wherein the ~~integrated Web Service architecture is configured for use in implementing~~ specific integrated Web Service business system is an Enterprise integrated Web Service.

64. (Currently amended) The method as recited in claim 58, wherein the ~~integrated Web Service architecture is configured for use in implementing~~ specific integrated Web Service business system is a Cross-Enterprise integrated Web Service.

65. (Original) The method as recited in claim 58, wherein the one or more components of the integrated Web Service architecture include one or more legacy mainframe systems.

66. (Original) The method as recited in claim 58, further comprising defining integration of one or more Enterprise Application Interface (EAI) products with the one or more Web Services technologies.

67. (Original) The method as recited in claim 58, wherein the plurality of integration tiers comprises one or more of: a client tier, a presentation tier, a business tier, an integration tier, and a resources tier.

68. (Original) The method as recited in claim 58, wherein the design patterns include one or more of:

an Application-to-Application design pattern;

- a Standard Build design pattern;
- a Hub-Spoke Replication design pattern;
- a Federated Replication design pattern;
- a Multi-Step Application integration design pattern;
- a Data Exchange design pattern;
- a Closed Process integration design pattern;
- an Open Process integration design pattern;
- a Service Consolidation–Broker integration design pattern; and
- a Reverse Auction–Broker integration design pattern.

69. (Currently amended) A computer-accessible storage medium ~~comprising~~ storing program instructions, wherein the program instructions are ~~configured~~ computer-executable to implement:

generating, in accordance with one or more integration design patterns, an integrated Web Service architecture for integrating a Web Service with a business system, wherein the integrated Web Service architecture comprises ~~comprising~~ a plurality of heterogeneous components of the business system ~~in accordance with one or more integration design patterns~~, wherein said generating an integrated Web Service architecture comprises:

generating one or more Use Cases for the integrated Web Service;

generating a high-level architecture for the integrated Web Service, wherein the high-level architecture identifies entities of the integrated Web Service and the relationships and interactions among the entities; and

generating a logical architecture for the integrated Web Service according to the Use Cases, wherein the logical architecture identifies two or more logical components of the integrated Web Service and the relationship among the logical components, and wherein the logical architecture comprises two or more layers; and

~~implementing the Web Service integrated with the business system according to the providing output indicating the generated integrated Web Service architecture for integrating the Web Service with the business system.~~

70. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein, in said generating an integrated Web Service architecture, the program instructions are further ~~configured~~ computer-executable to implement:

defining a plurality of integration tiers, one or more basic components, and one or more Web Services technologies for integration; and

defining how each of the plurality of integration tiers communicates with others of the plurality of integration tiers.

71. (Currently amended) The computer-accessible storage medium as recited in claim 70, wherein the plurality of integration tiers comprises one or more of: a client tier, a presentation tier, a business tier, an integration tier, and a resources tier.



72. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein, in said generating an integrated Web Service architecture, the program instructions are further ~~configured~~ computer-executable to implement defining integration of one or more Enterprise Application Interface (EAI) products with the one or more Web Services technologies.

73. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein the business system is an Enterprise business system.

74. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein the business system is a Cross-Enterprise business system.

75. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein the plurality of heterogeneous components of the business system includes one or more legacy mainframe systems.

76. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein the integrated Web Service architecture comprises:

a service provider configured to provide one or more services on an integrated Web Service business system implemented according to the integrated Web Service architecture; and

one or more service requesters configured to access the one or more services from the service provider via a network.

77. (Currently amended) The computer-accessible storage medium as recited in claim 76, wherein the integrated Web Service business system is a Business-to-Consumer system, wherein the service provider is a business service provider, and wherein the service requester is an end user.

78. (Currently amended) The computer-accessible storage medium as recited in claim 76, wherein the integrated Web Service business system is a Business-to-Business system, wherein the service provider is a business service provider, and wherein the service requester is a business server.

79. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein the design patterns include one of a Synchronous Mainframe Web Services design pattern and an Asynchronous Mainframe Web Services design pattern.

80. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein the design patterns include one or more of:

an Application-to-Application design pattern;

a Standard Build design pattern;

a Hub-Spoke Replication design pattern;

a Federated Replication design pattern;

a Multi-Step Application integration design pattern;

a Data Exchange design pattern;

a Closed Process integration design pattern;

an Open Process integration design pattern;

a Service Consolidation–Broker integration design pattern; and

a Reverse Auction–Broker integration design pattern.

81. (Currently amended) The computer-accessible storage medium as recited in claim 69, wherein the layers comprise two or more of:

a network layer configured to serve as an underlying network for integrated Web Services implemented according to the integrated Web Service architecture;

a transport layer for delivering messages between components of the integrated Web Services;

a service description language layer configured to describe service type and functionality of the integrated Web Services;

a transaction routing layer configured to route messages on the transport layer;

a service discovery layer configured to search for and locate the integrated Web Services;

a service negotiation layer configured to negotiate exchanges between service requesters and service providers implemented according to the integrated Web Service architecture;

a management layer configured for provisioning of the integrated Web Services and for monitoring and administration of the integrated Web Services;

a Quality of Service layer configured to provide reliability, scalability, and availability for the integrated Web Services;

a security layer configured to provide authentication, entitlement, and non-repudiation security on the transport layer; and

an Open Standards layer.

82. (Currently amended) A computer-accessible storage medium ~~comprising~~ storing program instructions, wherein the program instructions are ~~configured~~ computer-executable to implement:

identifying one or more logical components of ~~[[the]]~~ an integrated Web Service architecture for implementing a specific integrated Web Service business system according to one or more use case requirements for the specific integrated Web Service business system;

translating the one or more use case requirements for the specific integrated Web Service business system and one or more technical constraints for the specific integrated Web Service business system to determine a plurality of Web Service components for the integrated Web Service architecture, wherein the Web Service components include software components;

categorizing the Web Service components into two or more related groups according to a Web Services architecture integration framework;

defining a plurality of integration tiers for the integrated Web Service architecture and one or more Web Services technologies for the integrated Web Service architecture according to a Web Services architecture integration framework;

defining how each of the plurality of integration tiers communicates with others of the plurality of integration tiers in the integrated Web Service architecture according to the Web Services architecture integration framework;

organizing the groups of Web Service components according to the plurality of integration tiers and two or more layers of the integrated Web Service architecture; and

applying one or more design patterns to the integrated Web Service architecture where appropriate; and

providing output indicating the generated integrated Web Service architecture for implementing the specific integrated Web Service business system.

83. (Currently amended) The computer-accessible storage medium as recited in claim 82, wherein the integrated Web Service architecture comprises:

a service provider configured to provide one or more services on ~~[[an]]~~ the integrated Web Service business system implemented according to the integrated Web Service architecture; and

one or more service requesters configured to access the one or more services from the service provider via a network.

84. (Currently amended) The computer-accessible storage medium as recited in claim 83, wherein the integrated Web Service business system is a Business-to-Consumer system, wherein the service provider is a business service provider, and wherein the service requester is an end user.

85. (Currently amended) The computer-accessible storage medium as recited in claim 83, wherein the integrated Web Service business system is a Business-to-Business system, wherein the service provider is a business service provider, and wherein the service requester is a business server.

86. (Currently amended) The computer-accessible storage medium as recited in claim 82, wherein the layers comprise two or more of:

- a network layer configured to serve as an underlying network for Web Services implemented according to the integrated Web Service architecture;
- a transport layer for delivering messages between components of the integrated Web Service architecture;
- a service description language layer configured to describe service type and functionality of the integrated Web Service architecture;
- a transaction routing layer configured to route messages on the transport layer;
- a service discovery layer configured to search for and locate services in the integrated Web Service architecture;
- a service negotiation layer configured to negotiate exchanges between service requesters and service providers implemented according to the integrated Web Service architecture;
- a management layer configured for provisioning of the integrated Web Service architecture and for monitoring and administration of the integrated Web Service architecture;
- a Quality of Service layer configured to provide reliability, scalability, and availability for the integrated Web Service architecture;
- a security layer configured to provide authentication, entitlement, and non-repudiation security on the transport layer; and

an Open Standards layer.

87. (Currently amended) The computer-accessible storage medium as recited in claim 82, wherein the ~~integrated Web Service architecture is configured for use in implementing specific integrated Web Service business system~~ is an Enterprise integrated Web Service.

88. (Currently amended) The computer-accessible storage medium as recited in claim 82, wherein the ~~integrated Web Service architecture is configured for use in implementing specific integrated Web Service business system~~ is a Cross-Enterprise integrated Web Service.

89. (Currently amended) The computer-accessible storage medium as recited in claim 82, wherein the one or more components of the integrated Web Service architecture include one or more legacy mainframe systems.

90. (Currently amended) The computer-accessible storage medium as recited in claim 82, wherein the program instructions are further ~~configured~~ computer-executable to implement defining integration of one or more Enterprise Application Interface (EAI) products with the one or more Web Services technologies.

91. (Currently amended) The computer-accessible storage medium as recited in claim 82, wherein the plurality of integration tiers comprises one or more of: a client tier, a presentation tier, a business tier, an integration tier, and a resources tier.

92. (Currently amended) The computer-accessible storage medium as recited in claim 82, wherein the design patterns include one or more of:

an Application-to-Application design pattern;

a Standard Build design pattern;

- a Hub-Spoke Replication design pattern;
- a Federated Replication design pattern;
- a Multi-Step Application integration design pattern;
- a Data Exchange design pattern;
- a Closed Process integration design pattern;
- an Open Process integration design pattern;
- a Service Consolidation–Broker integration design pattern; and
- a Reverse Auction–Broker integration design pattern.